

NON-PUBLIC?: N
ACCESSION #: 8911220160
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Nine Mile Point Unit 2 PAGE: 1 OF 5

DOCKET NUMBER: 05000410

TITLE: Reactor Scram on High Neutron Flux Due to Personnel
Error/Procedure Deficiency
EVENT DATE: 10/18/89 LER #: 89-036-00 REPORT DATE: 11/17/89

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 2 POWER LEVEL: 001

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Robert G. Smith, NMP2 Superintendent TELEPHONE: (315)349-2388
of Operations

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

On October 18, 1989, at 06:15:41 hours, Nine Mile Point Unit 2 (NMP2) experienced an Upscale Trip of the Intermediate Range Monitors (IRMs) resulting in an automatic actuation of the Reactor Protection System (RPS) and a full reactor scram.

At the time of the event, the reactor mode switch was in the START/HOT STBY position with reactor power in the Intermediate Range (1%).

The root cause for this event was determined to be inadequate control of activities associated with the Plant Shutdown on the part of Control Room personnel. A contributing factor was a procedural deficiency. Corrective actions include (1) instructing operating shift personnel on this event, (2) revising the Operations training program, and (3) revising Plant Shutdown Procedure N2-OP-101C.

END OF ABSTRACT

TEXT PAGE 2 OF 5

I. EVENT DESCRIPTION

On October 1, 1989, at 06:15:41 hours, Nine Mile Point Unit 2 (NMP2) experienced an Upscale Trip of the Intermediate Range Monitors (IRM's) resulting in an automatic actuation of the Reactor Protection System (RPS) and a full reactor scram. At the time of the event, the reactor mode switch was in the START/HOT STBY position with reactor power in the intermediate range (1%). Reactor pressure and coolant temperature were 552 psig and 475 degrees F respectively.

Nine Mile Point Unit 2 (NMP2) Operations personnel were performing a normal plant shutdown in response to an increasing drywell floor drain leak rate. Control rods were being inserted in accordance with Operating Procedure N2-OP-101C (Plant Shutdown).

At 06:14:01 hours, Reactor Water Cleanup reject flow was increased to restore normal system flow. Feedwater system flow consequently increased to maintain reactor vessel water level.

At 06:14:49 hours, Operations personnel were removing steam loads in accordance with Operating Procedure N2-OP-9 (Condenser Air Removal) and Operating Procedure N2-OP-101C (Plant Shutdown), to gain improved control of the cooldown rate.

The above actions, in parallel with the high cooldown rate, ultimately caused reactor vessel water level to decrease approximately 1.5 inches from the previously maintained water level. The feedwater system again responded to the lower indicated water level by increasing feedwater flow. The introduction of the relatively cold (84 degrees Fahrenheit) feedwater resulted in a significant increase in core inlet subcooling, contributing positive reactivity, in excess of the negative reactivity from control rod insertion (due to restrictions being enforced by the rod sequence control system).

A Source Range Monitor (SRM) short period alarm was received at 06:15:13. Responding to the increasing reactor power level, the reactor operator took immediate action to up-range the IRM's. An auto RPS A and B scram occurred at 06:15:41, due to high upscale trips on IRM's C and D. The operators verified all rods were inserted and carried out the required actions of Operating Procedure N2-OP-101C. All systems functioned as designed.

II. CAUSE OF EVENT

The root cause for this event was determined to be inadequate control and coordination of activities associated with the Plant Shutdown on the part of the control room personnel. Specifically:

1. The Chief Shift Operator (CSO) did not properly control the multiple activities affecting reactor power during the shutdown process.
2. There was inadequate communication among the control room operators, performing the activities, such that each was not aware of the others activities.
3. The Senior Reactor Operators (SRO's) did not properly oversee the control room activities occurring during this time period.

A contributing factor to this event was the inadequate direction provided in the Plant Shutdown procedure as to when to secure steam load during the Plant Shutdown process.

III. ANALYSIS OF EVENT

This event is reportable in accordance with 10CFR50.73 (a) (2) (iv), "Any event or condition that resulted in manual or automatic actuation of any engineered safety feature, including the Reactor Protection system".

The reactor scram which occurred as a result of the intermediate range monitor trip is a conservative action and poses no adverse safety consequences at any reactor power level. The event did not in any way adversely affect any other safety systems or the operators ability to achieve safe shutdown. All systems operated as designed and no other engineered safety features were actuated. This event is analyzed in Chapter 15.1 of the Updated Safety Analysis Report (USAR) "Decrease in Reactor Coolant Temperature".

IV. CORRECTIVE ACTIONS

1. The Operations management held a post-scram brief with the involved shift personnel to discuss the sequence of events that led to the reactor scram. All other shifts reviewed the

post-scrum brief through "Station Shift Supervisor Instructions" with their Station Shift supervisor. The content of these instructions is as follows:

A. The on-duty SRO must increase their involvement and oversights of activities associated with startups, shutdowns and reactivity changes.

B. There shall not be more than one activity being performed at any one time that affects or could affect core reactivity.

C. At low power (IRM range) increased attention to the effects on reactor power resulting from changes in reactor pressure and/or changes in feedwater flow or temperature is warranted.

D. Communication between control room operators must be more formal and complete. The on-duty SRO must enforce the established policy on use of verbal communications.

E. The on-duty SRO and CSO must maintain appropriate control over activities being performed during startups, shutdowns and reactivity changes.

2. A Training Modification Request has been submitted on the startup/shutdown simulator training to incorporate activities at low power to familiarize operators with reactor power response.

3. Operating Procedure N2-OP-101C "Plant Shutdown" is being revised to provide clear direction concerning when to secure steam loads both before and during the cooldown process.

V. ADDITIONAL INFORMATION

1. There was one previous similar event LER 87-058 (reactor scram on high neutron flux due to personnel error). The Training Modification Request (TMR) for LER 87-058 was a one time review in training. The TMR for this event should address the issues of this LER on a continuing training cycle basis.

TEXT PAGE 5 OF 5

2. Identification of components referred to in this LER:

COMPONENT IEEE 803 IEEE 805

Intermediate Range Monitors IG
Reactor Protection System JC
Reactor Water Cleanup CE
Feedwater System SJ
Steam Jet Air Ejectors SH
Steam Supply Blocking Valve SA
Condenser COND SG
Drywell Floor Drain DRN WK
Control Rods AA

3. Failed components: none

ATTACHMENT 1 TO 8911220160 PAGE 1 OF 1

NIAGARA MOHAWK

NINE MILE POINT NUCLEAR STATION/ P.O. BOX 32, LYCOMING, N.Y. 13093
TELEPHONE (315) 343-2110

NMP56864

November 17, 1989

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

RE: Docket No. 50-410
LER 89-36

Gentlemen:

In accordance with 10CFR50.73, we hereby submit the following Licensee Event Report.

LER 89-36 Which is being submitted in accordance with 10CFR50.73 (a) (2)(iv), "Any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS).

A 10CFR50.72 report was made at 0640 on October 18, 1989.

This report was completed in the format designated in NUREG-1022, Supplement 2, dated September 1985.

Very truly yours,

J. L. Willis
General Superintendent
Nuclear Generation

JLW/DPS/lmc

ATTACHMENT

cc: Regional Administrator, Region I
Sr. Resident Inspector, W. A. Cook

*** END OF DOCUMENT ***
